

INTERNATIONAL SEARCH REPORT

onal Application No
PCT/GB 03/04391

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 GOIN35/00 GOIN33/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 GOIN A01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, COMPENDEX, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	R.M.PEMBERTON, J.P.HART, T.T.MOTTRAM: "An electrochemical immunosensor for milk progesterone using a continuous flow system" BIOSENSORS & BIOELECTRONICS, vol. 16, no. 9-12, December 2001 (2001-12), pages 715-723, XP002267665	1-9, 12, 14
Y	paragraphs '02.2!', '02.3!', '02.5!', '03.1!' figures 1,2 abstract --- -/--	10, 11, 13, 20

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

S document member of the same patent family

Date of the actual completion of the international search

24 May 2004

Date of mailing of the international search report

14. 06. 2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
✓ Y	T.MOTTRAM, J.HART, R.PEMBERTON: "A Sensor Based Automatic Ovulation Prediction System For Dairy Cows" PROCEEDINGS OF THE 5TH ITALIAN CONFERENCE, SENSORS AND MICROSYSTEMS, 12 - 16 February 2000, pages 44-53, XP009024474 Lecce, Italy page 47, paragraph 2 abstract	10,11, 13,20,21
✓ A	--- VELASCO-GARCIA M N ET AL: "Biosensors in the livestock industry: an automated ovulation prediction system for dairy cows" TRENDS IN BIOTECHNOLOGY, ELSEVIER PUBLICATIONS, CAMBRIDGE, GB, vol. 19, no. 11, 1 November 2001 (2001-11-01), page 433 XP004309119 ISSN: 0167-7799 the whole document	20
✓ A	--- US 3 526 480 A (REID GEORGE C ET AL) 1 September 1970 (1970-09-01) figure 3	10-14
✓ A	--- WO 01/59449 A (JEFFRIES KEITH WELDON ;DOUBLE K ELECTRONICS LTD (NZ); FISHER ROGER) 16 August 2001 (2001-08-16) the whole document	1-14,20, 23
✓ A	--- EP 0 713 641 A (MAASLAND NV) 29 May 1996 (1996-05-29) the whole document	1-14,20, 23
✓ A	--- LAITINEN M P ET AL: "Affinity immunosensor for milk progesterone: identification of critical parameters" BIOSENSORS & BIOELECTRONICS, ELSEVIER SCIENCE PUBLISHERS, BARKING, GB, vol. 11, no. 12, 1996, pages 1207-1214, XP002213996 ISSN: 0956-5663 the whole document	1-14,20, 23
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I - onal Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
✓ A	PEMBERTON R M ET AL: "COMPARISON OF 1-NAPHTHYL PHOSPHATE AND 4 AMINOPHENYL PHOSPHATE AS ENZYME SUBSTRATES FOR USE WITH A SCREEN-PRINTED AMPEROMETRIC IMMUNOSENSOR FOR PROGESTERONE IN COWS MILK" BIOSENSORS & BIOELECTRONICS, ELSEVIER SCIENCE PUBLISHERS, BARKING, GB, vol. 14, no. 5, 1999, pages 495-503, XP000916146 ISSN: 0956-5663 the whole document	1-14,20, 23
✓ A	RODNEY W. CLAYCOMB AND MICHAEL J. DELWICHE: "Biosensor for on-line measurement of bovine progesterone during milking" BIOSENSORS AND BIOELECTRONICS, vol. 13, no. 11, November 1998 (1998-11), pages 1173-1180, XP002267666 the whole document	1-14,20, 23
✓ X	EP 0 459 511 A (DAIKIN IND LTD) 4 December 1991 (1991-12-04)	15,16
✓ Y	page 4, line 40 -page 5, line 1 page 5, line 17 - line 47 figures 1,4,5	17-19, 21,22
✓ Y	US 3 620 678 A (LAUCOURNET ROBERT ET AL) 16 November 1971 (1971-11-16) column 5, line 1 - line 4 figure 1	17
✓ Y	EP 0 299 517 A (FUJI PHOTO FILM CO LTD) 18 January 1989 (1989-01-18) column 9, line 15 - line 33 column 13, line 10 - line 22 figures 1,2	18,19,22
✓ A	DE 39 08 123 A (SCHULZ PETER) 20 September 1990 (1990-09-20) the whole document	15-19
✓ A	US 4 218 421 A (MACK JOHN C JR ET AL) 19 August 1980 (1980-08-19) the whole document	15-19

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Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-14,20,23

Claims 1-14 and 23 refer to an automated detection apparatus for testing biological samples, especially for determining the concentration of progesterone in milk.

Claim 20 refers to an automated milking apparatus incorporating the detection apparatus of claims 1-14.

2. Claims: 15-19, 21,22

Claims 15-19 refer to a biosensor cassette holding a reel of biosensor film and means to use the film in biochemical testing.

Claims 21 and 22 refer to an automated milking apparatus incorporating the biosensor film cassette.

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